
Chapter 2 Alternatives Including the Proposed Action

The following changes were made in Chapter 2 between the Draft and Final Environmental Impact Statement. Minor corrections, explanations and edits are not included in this list.

- Additional information has been added to the description of the Proposed Action which specifies locations of delivery stations in Douglas County.

Description of Proposed Action

Natural gas is available near Roseburg from Williams Gas Pipeline - West, formerly Northwest Pipeline Company. The Williams pipeline system transports gas from producing wells in the Rocky Mountain region of the U.S. and Canada. The natural gas produced from the wells is stripped of corrosive elements, excess water and heavier hydrocarbons before entering the pipeline system. The natural gas is delivered via pipelines from these wells to Portland and the Willamette Valley. The Williams Grants Pass lateral extends south of Eugene, generally along Interstate-5, to Grants Pass.

In the Roseburg area, Williams has a single 10-inch steel pipeline operating at 500 to 800 pounds per square-inch (psi). The proposed action would be a 12-inch steel pipeline connecting to the existing 10-inch pipeline a few miles south of Roseburg.

The pipeline would be buried for its entire length. Its only above-ground components would be line markers, test stations, several bridge crossings and valve settings. It would be built and hydrostatically tested to 1,500 psi which allows a Maximum Allowable Operating Pressure (MAOP) of 1,000 psi. It would operate at the same pressure as the Williams pipeline, which is normally 500 to 800 psi.

As noted in Chapter 1, approximately 3 miles of the preferred pipeline route would cross BLM-managed lands within the BPA power line ROW. The remainder of the pipeline would be located within the ROW of the CBW Road and other public roads, or within PP&L and BPA ROW crossing privately owned properties.

The pipeline would terminate at Ocean Boulevard in Coos Bay where a NW Natural distribution system would be built. NW Natural has been granted the “exclusive territory” rights for gas distribution in Coos County, excluding the city of Bandon.

In Douglas County, natural gas would be made available to a delivery station in the town of Lookingglass where exclusive rights are held by Avista Utilities Corporation (hereafter referred to Avista). The delivery station would be relatively small, not requiring a city gate station, and would be located near the Lookingglass school.

The straight-line distance from the Williams connection location (just south of Roseburg) to Ocean Boulevard is about 44 miles, whereas, the proposed action traverses approximately 60 miles. The proposed action within existing road and utility corridors is the shortest practical route from source to destination.

The permanent easement on BLM-managed lands would total approximately 14 acres. Additional temporary utility corridor construction ROW width (as necessary) is also requested. The additional utility corridor construction area of approximately 7 acres would also be completely inside the BPA utility corridor and returned to BLM control after completion of construction and site restoration.

Several delivery stations would deliver gas to end users at various locations in Coos County and Douglas County. None of these delivery stations would be located on BLM-managed lands. For safety reasons, the proposed action includes 5 block valves (see Appendix J), placed at intervals along the pipeline corridor. Placement of the valves is based upon pipeline safety regulations and operational factors, such as local distribution and lateral pipeline placement. None of these block valves would be installed on BLM-managed lands.

Location of the Proposed Action

The corridor for the proposed action would traverse the Coast Range in southern Oregon from the western region of Douglas County Township 27 South, Range 6 West, Section 33 (T27S, R6W, Sec. 33) to the western region of Coos

County (T25S, R13W, Sec. 27). The terrain varies from gentle to very steep as the corridor follows 230 kilovolt (kV) transmission lines operated by BPA and PP&L, the CBW Road, and BPA and PP&L 115 kV transmission lines and roads into Coos Bay. (Refer to Map 1).

The proposed action would connect to the Williams Gas Pipeline near Happy Valley, approximately 4 miles southwest of I-5 freeway exit 124 (Harvard Avenue) in Roseburg. The pipeline route continues - as described below - until it connects to its delivery facility at Ocean Boulevard.

The following is a sequential list (east to west) of section locations which contain a portion of the proposed action:

Douglas County

T27S, R6W, Sections 33, 32 and 31;
T27S, R7W, Sections 36, 35, 34, 33, 32 and 31;
T271/2S, R7W, Section 6;
T28S, R7W, Section 6;
T28S, R7 1/2W, Section 6;
T28S, R8W, Sections 1, 2, 11, 14, 15, 16, 17, 18 and 7.

Coos County

T28S, R9W, Sections 12, 13, 14, 11, 10, 9, 8 and 7;
T28S, R10W, Sections 12, 11, 10, 9, 8, 5 and 6;
T28S, R11W, Sections 12, 11, 10, 3 and 4;
T27S, R11W, Sections 33, 32, 29, 30 and 19;
T27S, R12W, Sections 24, 23, 14, 15, 16, 9, 10 and 4;
T26S, R12W, Section 33, 32, 29, 30 and 19;
T26S, R13W, Sections 25, 24, 23, 14, 15, 10 and 3;
T25S, R13W, Sections 34 and 27.

Description of the Proposed Action Corridor

The proposed action corridor is delineated into Segments A through K (Table 1). These segments aid discussion of the proposed action by breaking it into manageable portions.

Table 1: Proposed Action Segment Description

Segment	Begins	Ends	Distance in Miles
A	Williams Delivery Station, approximately 4 miles south- west of Roseburg, OR. (T27S, R6W, Sec.33)	BPA Reston Substation (T27S, R7W, Sec.31)	8.1
B	BPA Reston Substation (T27S, R7W, Sec.31)	Tenmile Block Valve CBW Road Mile Point 1.7 (T28S, R8W, Sec.16)	5.7
C	Tenmile Block Valve (T28S, R8W, Sec.16)	Douglas-Coos County Line Douglas County Mile Point 6.0 (T28S, R9W, Sec.12)	2.8
D	County Line Coos County Mile Point 36.3 (T28S, R9W, Sec.12)	Lone Pine Lane CBW Road Mile Point 17.5 (T28S, R11W, Sec.10)	18.3
E	Lone Pine Lane (T28S, R11W, Sec.10)	Cherry Creek CBW Road Mile Point 17.9 (T28S, R11W, Sec.4)	1.6
F	Cherry Creek (T28S, R11W, Sec.4)	McKinley, OR CBW Road Mile Point 17.1 (T27S, R11W, Sec.32)	0.9
G	McKinley, OR (T27S, R11W, Sec.32)	Fairview, OR CBW Road Mile Point 12.5 (T27S, R12W, Sec.24)	3.6
H	Fairview, OR (T27S, R12W, Sec.24)	Sumner Lane at PP&L CBW Road Mile Point 2.7 (T26S, R12W, Sec.30)	9.9
I	Sumner Lane (T26S, R12W, Sec.30)	U.S. 101 CBW Road Mile Point 0.0 (T26S, R13W, Sec.23)	2.4
J	U.S. 101 (T26S, R13W, Sec.23)	Red Dike Road CR 183 (T26S, R13W, Sec.10)	2.7
K	Red Dike Road (T26S, R13W, Sec.10)	Coos Bay, OR Off Ocean Blvd. (T25S, 13W, Sec.27)	3.1

Pipeline Laterals

The Coos County 12-inch mainline would extend to the edge of the city of Coos Bay. The Coos County project would also include smaller pipeline laterals to serve Coquille, Myrtle Point and possibly Bandon.

These lateral pipelines would be smaller in diameter than the 12-inch mainline. The projected demand in the smaller towns could be served with 6-inch and 4-inch pipelines. The laterals would be built with welded and coated steel pipe, to the same 1,000 pounds per square inch (psi) MAOP and Department of Transportation (DOT) standards as the mainline. The laterals would be operated at the same pressure as the mainline. The same Project Design Criteria (PDCs) and Best Management Practices (BMPs) described for the mainline will be implemented for these laterals.

The routes of these lateral pipelines are not yet finalized. The pipelines would generally follow existing road, power and other ROW. There is no route being considered that would impact BLM or other Federal lands (refer to Map 2 of the Draft EIS).

Lateral Routes

The lateral pipeline route would likely follow a BPA utility ROW to Bandon, and a former railroad ROW to Coquille and Myrtle Point.

Fairview to Hwy 42

Present plans would have the lateral begin at the Fairview block valve (Segment G). The lateral pipeline would likely leave the site of the block valve along a former railroad grade and follow Fairview Road (County Road [CR] 9 from Coquille) for approximately 1.6 miles.

At about 1.6 miles from the Fairview block valve, the lateral route would likely follow the BPA Fairview-Rogue 230 kV powerline utility corridor. This route heads southwest over the ridge at Rink Peak at 1,070 feet above sea level. The BPA corridor descends into the Coquille River valley, crossing Hwy 42 at Mile Marker (MM) 14.4. The pipeline lateral would be bored-under Hwy 42 and would follow a former Southern Pacific Railroad ROW adjacent to the highway corridor. Near the BPA crossing of the railroad grade, a block valve would be at the end of this 7.5-mile lateral segment. This segment would cross Lee Valley Road (CR 2B) and Hwy 42, Steele Creek, Blair Creek, Lost Creek and Aiken Creek in the Coquille watershed. This segment would be built of 6-inch or 8-inch diameter pipe.

Coquille Lateral

This lateral would likely start at the Hwy 42 block valve and travel north, following a former railroad ROW. The railroad from Coos Bay to Coquille still has limited traffic, but is currently under abandonment discussion. The lateral route would be in or beside the railroad grade, subject to agreement with the railroad. If such an agreement is not made, the pipeline would be installed on highway ROW or on private land between the two corridors. The Coquille Lateral would then follow rail or road corridors to the south edge of Coquille. This segment would be built of 4-inch diameter pipe and approximately 2 miles long.

Myrtle Point Lateral

This lateral would likely start at the Hwy 42 block valve and travel south along a former railroad ROW. The anticipated route would be in the railroad ROW, Hwy 42 or on private land. The Myrtle Point Lateral would end at the north edge of Myrtle Point near Hwy 42. This segment would cross 4 county roads. The North Fork of the Coquille River would be directionally-drilled. This segment would be built of 4-inch diameter pipe and approximately 6 miles long.

Bandon Lateral

This lateral would likely start at the Hwy 42 block valve and travel west, following the BPA ROW to the east edge of Bandon. The pipeline would be directionally-drilled under the Coquille River near river mile 27. This route would follow BPA Rogue 230 kV line to Fat Elk Road. Near Rollan Creek, the BPA Rogue corridor converges with the BPA Number 1 Fairview-Bandon 115 kV line. The lateral would then follow a county road for a short distance. At Lampa Creek, the pipeline would follow county and/or forest roads for easier negotiation of creek crossings and elevation changes.

This segment would cross 8 county roads. The Coquille River would be directionally-drilled. The anticipated route would cross approximately 12 named streams, and numerous unnamed perennial and intermittent streams. The segment would be built of 4-inch diameter pipe and approximately 12 miles long.

Schedule, Sizing and Route Selection Factors

The Coos County 12-inch mainline is scheduled for completion into Coos Bay by the end of 2002. The smaller pipeline laterals are anticipated to be finished by the end of 2003. There are several factors, including the size of lateral pipelines and selection of the lateral routes, which are not yet confirmed.

Gas distribution to Bandon is an unknown factor. NW Natural has been authorized by the OPUC to serve all parts of Coos County with natural gas, except within the city limits of Bandon. Bandon has not yet decided whether to build its own gas distribution system, allow NW Natural a franchise, or prohibit natural gas and protect its existing electric power. Bandon may also wish to install or contract for a natural gas-fired generator to provide electricity. These unknown factors could result in: 1) a 4-inch lateral constructed as envisioned now; 2) a larger lateral for greater power generation; 3) no lateral if gas distribution is not permitted; or 4) a re-route of the pipeline to accommodate a generator adjacent to the Bandon area.

The Beaver Hill area presents another unknown factor. Coos County operates a solid waste disposal plant near Beaver Hill in Section 24-T27S-R14W near U.S. 101 between Coos Bay and Bandon. This site is close to a PP&L utility corridor, has suitable zoning and could be a potential power generation site. Pipeline access to Beaver Hill would be feasible from Fairview via Coquille or along U.S. 101 from Coos City.

No proposals have been made to Coos County. None of the likely routes to Coquille, Myrtle Point, Bandon or Beaver Hill involve BLM-managed lands. At this point in the planning process for these laterals, it is premature to formulate a detailed assessment on any of the possible lateral routes. Without BLM involvement, the COE would become the lead Federal agency for any lateral projects, and all environmental regulations would be adhered to.

NW Natural Gas Facilities (Coos County)

NW Natural plans to install three types of gas mains:

- Welded steel main lines capable of intermediate to mainline pressure (up to 1,000 psi);
- Polyethylene (PE) main lines at 60 psi or less (4-inch to 8-inch diameter);
- PE pipes down side streets at 60 psi or less (2-inch diameter).

NW Natural plans to extend service to industrial users on the North Spit. This service would likely be an 8-inch to 12-inch diameter welded steel pipeline. Tentative plans for this line would follow Ocean Boulevard and Newmark Avenue to Empire, serving as the primary source for the Coos Bay to North Bend distribution system.

The North Spit extension would be built within 4 years of completion of the proposed action. The extension would be directionally-drilled under Coos Bay, and placed within the Trans Pacific Parkway ROW to Weyerhaeuser. Directionally-drilling under Coos Bay would require a permit from the COE. This extension will be subject to NEPA when plans are finalized. The bay crossing has been discussed as a joint venture with the local water board to upgrade water service on the North Spit.

While the main lines can be used to directly serve larger users, most customers would be serviced by a 2-inch PE main line connecting in their street or alley where a plastic tapping tee is fused onto the main line and a 1-inch diameter PE service pipe is run through the yard to a meter at a house or building. Each customer would have a separate service line and meter.

Utility distribution mains are installed in public streets, utility easements and other existing ROW. Mains must be installed with 18 to 36 inches of cover in public corridors depending on pressure rating and location. Construction of mains would be entirely in existing streets, alleys and public utility easements (PUE). Crossings of streams and wetlands usually occur in the roadway or on bridges with no impact to the off-road areas. NW Natural is certified by the OPUC to install gas distribution systems and serve all parts of Coos County with natural gas, except within the city limits of Bandon.

Avista Natural Gas Facilities (Douglas County)

Avista currently supplies natural gas to many communities in Douglas County, including the city of Roseburg. Installation of a small delivery station in the town of Lookingglass would allow Avista to extend services to consumers in the Lookingglass area. This service would likely be a 2-inch diameter welded steel pipeline.

Pipeline Construction Alternatives Summary

Table 2: Action Alternatives Route Summary

Description	Proposed	Alt. 42
Total length (miles)	59.1	82.7
Total Number of Streams Crossed	188	209
Total Number of Large Streams Crossed (streams 30+ feet summer wetted width)	2	18
Total Number of Medium Streams Crossed (streams 15 to 30 feet summer wetted width)	6	12
Total Number of Small Streams Crossed (streams less than 15 feet summer wetted width)	180	179
Total Number of Wetlands	2	9
Adjacent Floodplain (miles)	2.2	15.3

Pipeline placement, except for certain bridges, would be entirely underground within existing roads and utility (powerline) corridors. Along the utility ROW, the pipeline would be placed near the edge away from adjacent trees. The CBW Road would receive full-width repaving where the pipeline is installed under the present asphalt road surface. In addition, the gravel-surfaced road sections will be paved after construction of the pipeline. This includes 10.6 miles of Sitkum Lane east of Sitkum to the county line and 4.5 miles of Sumner Lane north of Fairview.

The proposed action is adjacent to some areas designated by the USFWS as Critical Habitat Units (CHUs). The proposed action also includes some difficult construction areas, including narrow canyon road beds and steep slopes along the utility corridors. The proposed action contains 188 stream crossings and 1 wetland crossing. Of the streams crossed, 180 are small streams (less than 0.2 cubic feet per second [cfs] of summer waterflow). The total length of 100-year floodplains adjacent to the proposed action is 2.2 miles. The CBW Road and utility corridors ROW would return to their current condition within 1 or 2 years.

Construction equipment would include bulldozers, backhoes, side-booms and other standard equipment typically used for pipeline construction. For the CBW Road segments, construction equipment would also include the typical road paving equipment necessary for full-width asphalt paving.

Operation and maintenance of the pipeline would be in accordance with all Federal, State and local regulations. (See Appendix J for Construction, Operation and Maintenance). Delivery of natural gas to the franchise holder (NW Natural) would generate revenue for the County, which would be applied toward the County's expenses to operate the pipeline. NW Natural anticipates to initially deliver 2 billion cubic feet of natural gas per year to customers in Coos County. The maximum potential throughput of the Coos Pipeline would be 25 billion cubic feet per year.

Proposed Action - Utility Corridors and the CBW Road

This alternative builds a pipeline along or near the CBW Road, as described in Table 3 below.

Table 3: Route Summary for Proposed Action

Segment	Description	ROW Type	Distance
A	Williams to Reston Substation	PP&L	8.1 miles
B	Reston to Tenmile	BPA	5.7 miles
C	Tenmile to County Line	BPA	2.8 miles
D	County Line to Lone Pine Lane	CBW Road	18.3 miles
E	Lone Pine Lane to Cherry Creek	BPA	1.6 miles
F	Cherry Creek to McKinley	CBW Road	0.9 mile
G	McKinley to Fairview	BPA	3.6 miles
H	Fairview to Sumner Lane	CBW Road	9.9 miles
I	Sumner Lane to U.S. Highway 101	CBW Road	2.4 miles
J	U.S. Highway 101 to Libby	BPA	2.7 miles
K	Libby to Coos Bay	BPA	3.1 miles
Total Length			59.1 miles

No Action Alternative

For the purposes of this EIS, the “No Action Alternative” is defined as the result if the BLM would not grant Coos County a discretionary ROW permit for a natural gas pipeline on lands administered by BLM. Effects addressed in this FEIS associated with the No Action Alternative assume that the result would be the present condition: the proposed natural gas pipeline is not constructed.

However, “No Action” by BLM will not necessarily result in the prevention of a new pipeline. If the Proposed Action is denied or unduly delayed, Coos County may very likely proceed on constructing the pipeline entirely within public roads and private easements included in the Preferred Route, avoiding Federal land administered by BLM.

This re-routing is not assessed as a unique or separate alternative, because the environmental impacts are nearly identical to those of the preferred alternative.

Approximately 86% of the proposed route (Segments A-B-D-F-H-I-J-K) would be built as described. Segments C-E-G of the proposed project would be built primarily in the CBW Road, rather than within nearby powerline corridors crossing Federal land as described in the Proposed Action. Detailed descriptions of these segments are given in Appendix I.

If BLM lands are not affected by the proposed action, the county would seek a permit from the COE, which would then be the lead Federal agency, to cross waterways within the corridor. The number and general location of streams and wetlands crossed would be virtually identical. Of the 188 streams and adjacent wetlands inventoried for the proposed action, there are only 4 small, intermittent drainage channels actually located on BLM land. The no action alternative would result in one of those channels being crossed on the CBW Road. Three of the BLM channels would be avoided entirely.

The hydrologic change of avoiding BLM land is two additional culvert crossings and two short bores or bridge crossings of the upper East Fork. No other perennial stream would be affected by this change.

Impacts to terrestrial habitats resulting in the re-routing of the proposed action off BLM-managed lands to the CBW Road would not be significantly different.

However, this minor re-route would require approximately 4 miles of additional construction and approximately \$2.3 million additional county expenditure.

For the purposes of this document, “No Action” means no “federal discretionary action” to grant a ROW across BLM land, and is assessed as such.

Hwy 42 (the South Route)

The Hwy 42 alternative (Table 4) would supply Coos Bay, North Bend and possibly other small communities within Coos and Douglas Counties with natural gas.

Pipeline placement would be underground, under or beside the road beds. No trees would be removed, since the pipeline would be located within the highway ROW.

Table 4: Route Summary for Alternative 3 (along Hwy 42)

Segment	Description	ROW Type	Distance
L	Winston to Tenmile	ODOT	12.9 miles
M	Tenmile to Camas Valley	ODOT	7.5 miles
N	Camas Valley to County Line	ODOT	10.5 miles
O	County Line to Powers Rd. Jct.	ODOT	24.0 miles
P	Powers Rd. Jct. to Myrtle Point	ODOT	2.0 miles
Q	Myrtle Point to Hwy 101 Jct.	ODOT	20.0 mile
R	Hwy 101 Jct. to Coos City	ODOT	0.2 miles
S	Coos City to Ocean Boulevard	BPA	5.6 miles
Total Length			82.7 miles

Relatively few private landowners would experience impact from construction activity. Construction equipment would be bulldozers, backhoes, side-mount cranes, etc., typically used for pipeline construction. Smaller equipment would be required in some portions, where the allowable working space is tighter.

This pipeline route would enter sensitive wildlife areas and difficult construction zones (including bedrock road beds) for a distance of about 7 miles. The difficulty would be further increased due to the fiber optic cables buried along either side of the road. Terrestrial and aquatic habitats would experience short-term disturbance, because not all negative effects can be minimized or avoided completely. This route would encounter 209 stream crossings and 9 wetlands. It is unlikely that visual impacts would remain after construction.

Traffic disruption would be considerable. Traffic volume along this alternative is high, as it is a major truck route to the population centers of Coos and Curry Counties. It is also a major tourist route to the Coastal region. For a period of 6 months or more, traffic would be delayed. (Refer to Map 1).

Pipeline capacity and throughput would be nearly identical to the proposed action. Pipeline operation and maintenance plans are expected to be similar to the description given in Appendix J.

Alternatives Considered But Rejected

Alternative Routes Rejected Without Intensive Studies

Straight-line route - The shortest route to the Coos County natural gas delivery point (just south of Coos Bay), would be a straight-line traverse from Roseburg. However, a straight-line alternative would encounter very steep topography containing critical habitats for federally protected and special status species. Significant impacts to the environment would likely be unavoidable, because no road or utility corridors exist along this straight-line route. This option was rejected after considering costs and environmental impacts.

Hwy 38 route - This route would connect with the Williams pipeline near the Hwy 38 / I-5 junction near Curtin, OR. This alternative is on the upstream side of the Winchester, OR, natural gas compressor station. This route would require a new compressor station and would be approximately 20 miles longer than the proposed action. This route was not considered economically feasible.

Alternative Sources of Natural Gas

Compressed Natural Gas (CNG) - Natural gas can be stored and shipped via truck in high-pressure gas transport cylinders. The retail cost of CNG is substantially higher than the retail cost of propane and therefore is not economically feasible for the Coos County.

Liquefied Natural Gas (LNG) - Natural gas can be liquefied at cryogenic temperature (-250 degrees F). Transport and storage are both expensive and technically challenging. Due to specialized facilities and associated costs, this method has been limited to non-industrial uses. LNG can be shipped in ocean-going tankers and barges. The nearest LNG sources are at gas production facilities in Alaska, Australia, Indonesia and the Mideast. This alternative would require a new docking facility that may require dredging of Coos Bay. The estimated cost of facilities are more than twice the cost of Coos County's portion of the estimated cost for the proposed action. LNG costs to the consumer would likely exceed the cost of most fuels presently being utilized in Coos County. NW Natural has LNG facilities in two Oregon locations and has studied LNG for various unserved communities. NW Natural owns the distribution rights for natural gas in Coos County and has determined that LNG is not economically feasible for Coos Bay.

Alternate Pipeline - Pacific Gas Transmission (PGT) operates an interstate pipeline system from Canada to California. The mainline runs through Bend and Klamath Falls, OR. The nearest pipeline connections would likely be at the Diamond Lake Junction northeast of Crater Lake, or at Medford, OR. A pipeline connecting to PGT would be approximately 100 miles longer than the proposed action.